

Title (en)
HYDRAULIC PUMP FOR OPHTHALMIC SURGERY

Title (de)
HYDRAULISCHE PUMPE FÜR AUGENCHIRURGIE

Title (fr)
POMPE HYDRAULIQUE POUR CHIRURGIE OPHTALMOLOGIQUE

Publication
EP 3097309 A4 20180404 (EN)

Application
EP 15779373 A 20150417

Priority
• US 201461981012 P 20140417
• US 201414471089 A 20140828
• US 2015026293 W 20150417

Abstract (en)
[origin: US2015297405A1] Apparatuses, systems, and method for hydraulic pumps are disclosed. Particularly, hydraulic pumps for ophthalmic surgical procedures are disclosed. Hydraulic pumps within the scope of the disclosure may include an aspiration pump. An example aspiration pump may include first and second hydraulic cylinders and a plurality of one-way valves that are operable to permit fluid flow into a first part of a hydraulic cylinder responsive to movement of a piston within the hydraulic cylinder in a first direction and operable to permit fluid to flow out of the hydraulic cylinder responsive to movement of the piston in a second direction opposite the first direction. The aspiration pump may be attached to a housing of a hand piece, or a portion of the aspiration pump may be received into the housing of the hand piece.

IPC 8 full level
F04B 1/00 (2006.01)

CPC (source: EP US)
A61F 9/00736 (2013.01 - EP US); **A61M 1/72** (2021.05 - EP); **A61M 1/774** (2021.05 - EP US); **A61M 1/81** (2021.05 - EP US); **A61M 3/0201** (2021.05 - EP); **F04B 9/10** (2013.01 - US); **F04B 9/1176** (2013.01 - US); **A61F 9/007** (2013.01 - EP US); **A61M 1/7413** (2021.05 - EP US); **A61M 1/743** (2021.05 - EP US); **A61M 2205/12** (2013.01 - EP US); **A61M 2210/0612** (2013.01 - EP US)

Citation (search report)
• [X] US 2005234394 A1 20051020 - ROSS ROD [US]
• [X] US 2012089080 A1 20120412 - ROSS RODNEY L [US], et al
• See references of WO 2015161149A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 10537471 B2 20200121; **US 2015297405 A1 20151022**; AU 2015247486 A1 20160804; AU 2015247486 B2 20180816; AU 2018229455 A1 20181004; CA 2937422 A1 20151022; CN 106030103 A 20161012; CN 106030103 B 20191018; EP 3097309 A1 20161130; EP 3097309 A4 20180404; EP 3097309 B1 20190522; EP 3546744 A1 20191002; EP 3546744 B1 20210113; JP 2017514058 A 20170601; JP 6592003 B2 20191016; WO 2015161149 A1 20151022

DOCDB simple family (application)
US 201414471089 A 20140828; AU 2015247486 A 20150417; AU 2018229455 A 20180912; CA 2937422 A 20150417; CN 201580010636 A 20150417; EP 15779373 A 20150417; EP 19175008 A 20150417; JP 2016560968 A 20150417; US 2015026293 W 20150417